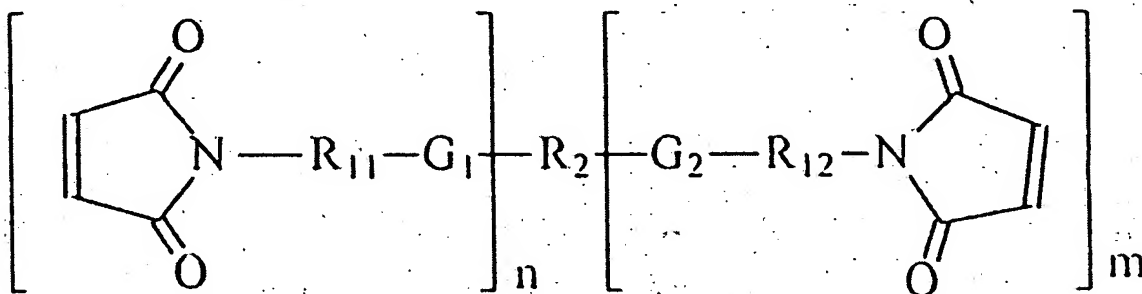


What is Claimed:

1. A method for controlling the cure rate of a water compatible non emulsion, non dispersing actinic radiation curable composition containing a maleimide derivative and having the structure:



wherein n and m each independently represent an integer of 1 to 5, the sum of m and n is 6 or smaller;

R₁₁ and R₁₂ each independently represent a linking group selected from the group consisting of an alkylene group, an alicyclic group, an arylalkylene group, and a cycloalkylalkylene group;

G₁ and G₂ each represent an ester linkage selected from the group consisting of -COO- and -OCO-;

and R₂ represents a linking chain having an average molecular weight of 100 to 100,000 selected from the group consisting of a (poly)ether or (poly)ester linking chain, in which at least one organic group consists of a group or groups selected from a straight or branched chain alkylene group, an alkylene group having a hydroxyl group, an alicyclic group, an aryl group, an arylalkylene group, and a cycloalkylalkylene group connected via at least one linkage selected from the group consisting of an ether or ester linkage;

wherein said method comprises adjusting the molecular weight of R₂, in the absence of a photoinitiator, to control the cure rate of the composition.

2. The method of claim 1 wherein when the molecular weight of R₂ is increased so as to increase the cure rate of said water compatible actinic radiation curable composition containing a maleimide derivative.

3. The method of claim 1 wherein when the molecular weight of R_2 is decreased so as to decrease the cure rate of said water compatible actinic radiation curable composition containing a maleimide derivatives.
4. The method of claim 1 wherein R_2 linking chain has an average molecular weight of 100 to 100,000.
5. The method of claim 1 wherein R_2 is selected from the group consisting of (poly)ether linking chains, (poly)ester linking chains and mixtures thereof, in which at least one organic group consists of a group or groups selected from a straight or branched chain alkylene group, an alkylene group having a hydroxyl group, an alicyclic group, an aryl group, an arylalkylene group, and a cycloalkylalkylene group connected via at least one linkage selected from the group consisting of an ether and ester linkage.
6. The method of claim 5 wherein R_2 incorporates repeating units containing at least one group selected from a C_2 - C_{24} straight or branched chain alkylene group, a C_2 - C_{24} alkylene group having a hydroxyl group.
7. The method of claim 6 wherein R_2 is a (poly)ester linking chain having an average molecular weight of 100 to 100,000 and incorporates repeating units containing at least one group selected from a C_2 - C_{24} straight or branched chain alkylene group, a C_2 - C_{24} alkylene group having a hydroxyl group and a C_6 - C_{24} aryl group.
8. The method of claim 6 wherein R_2 is a (poly)ether linking chain having an average molecular weight of 100 to 100,000 and incorporates repeating units containing at least one group selected from a C_2 - C_{24} straight or branched chain alkylene group, a C_2 - C_{24} alkylene group having a hydroxyl group and a C_6 - C_{24} aryl group.

9. The method of claim 8 wherein R_2 is polytetramethylene glycol or polyethylene glycol.
10. The method of claim 9 wherein R_2 is a polytetramethylene glycol having an average molecular weight of 100 to 4000.
11. The method of claim 10 wherein R_2 is a polyethylene glycol having an average molecular weight of 100 to 1000.